

### ***Claims***

1. A method for determining a container code on a container and a chassis code on a chassis, the container and chassis being associated with a truck, comprising:
  - 5 detecting when the truck has passed a first camera and the truck has stopped;  
with the first camera at a preset position for a wide view of the truck, determining whether the container is present, and if so, whether it is a first size or a second size;  
if the container is the first size, setting the first camera to preset position appropriate for viewing a first size container;
  - 10 if the container is the second size, setting the first camera to a preset position appropriate for viewing a second size container;  
taking an image of the container with the camera;  
passing the image to an OCR engine, which determines the container code.
2. The method of claim 1, wherein the step of detecting when the truck has passed a first  
15 camera uses an external trigger.
3. The method of claim 2, wherein the external trigger is a camera sensor, or a gatepass signal, or a push button signal, or a card reader signal.
4. The method of claim 1, wherein the step of detecting when the truck has passed the first camera and has stopped is accomplished by  
20 (i) when the first camera is in a first viewing position suitable for viewing the truck as the truck moves past the first camera, this position differing from either the preset position for viewing a wide view of the truck or the preset positions appropriate for viewing the first size container and the second size container, taking a series of images of the truck with the camera, and comparing the images in the series of images with each other, and also by comparing the

images in the series of images with a reference image, and finding that the truck has stopped when images are similar enough to each other to indicate no motion and to indicate that the camera views the reference image, and then

(ii) moving the camera view to the preset position for viewing a wide view of the truck.

5     5.     The method of claim 4, wherein the step of detecting when the truck has passed the first camera and has stopped further comprises, after the moving the camera view to the preset position for viewing a wide view of the truck, determining that that truck has stopped by taking a series of images of the truck with the first camera and comparing the images in the series with each other.

10    6.     The method of claim 5, further comprising passing at least some of the images of the truck taken with the camera the first camera is in a first position suitable for viewing the truck as the truck moves past the first camera to the OCR engine.

7.     The method of claim 6, wherein at least some of the images passed to the OCR engine taken with the camera in the position suitable for viewing the truck as the truck moves past the  
15   first camera are considered by the OCR engine both flipped and un-flipped.

8.     The method of claim 4, wherein comparing the images in the series of images with a reference image includes binarizing an image in the series and comparing that image with a reference image, which is also binarized.

9.     The method of claim 8, wherein binarizing the image in the series comprises taking the  
20   N brightest pixels as white and the remaining pixels as black, wherein N is based on the number of white pixels in the binarized reference image.

10.    The method of claim 8, wherein the reference image is based on an image of an icon applied to a gate lane over which the truck passes.

11.    The method of claim 1, wherein the step of determining whether the container is  
25   present, and if so, whether it is a first size or a second size comprises taking an image of the

truck with the camera in the preset position for viewing a wide view of the truck, performing separate morphological closing operations on two copies of that image, one with a horizontal structuring element and one with a vertical structuring element, to create a horizontal image and a vertical image, finding the number of lines in the horizontal image and the vertical image, finding the area and location of the horizontal lines and the vertical lines, and applying decision logic to determine if a chassis present, if a container is present, and if a container if present, whether it is of the first size or the second size.

12. The method of claim 1, wherein if a chassis is present, determining the chassis code with a second camera.

10 13. The method of claim 12, where the chassis code is determined by taking a series of images as the second camera pans in a direction corresponding to a direction that the truck is moving, and passing the images to a chassis OCR engine.

14. The method of claim 13, further comprising the step of validating the chassis code by comparing the chassis code as determined by the OCR engine with a preset list of chassis codes, and doing a binary search which compares an prefix of the chassis code as determined by the OCR engine.

15. The method of claim 1, wherein the first camera is mounted in a position above the height of the truck.

16. A method for determining a container code and chassis code associated with a truck, comprising:

viewing the truck with a rear camera as the truck passes beneath the rear camera, the rear camera focusing on a position pointing down, the viewing generating a series of images, collecting data from the rear camera and passing it to an OCR engine,

determining when the truck has completely passed beneath the rear camera by at least one of (a) comparing the camera view with a reference view that is obscured when the truck is

beneath the camera, and (b) comparing the series of images with each other and determining they are equivalent;

changing the rear camera view to a second position and collecting a second series of images at this second position;

5 determining that the truck has stopped by comparing the second series of images with each other determining they are equivalents;

determining whether the container is a first size or a second size by analyzing at least some of the second series of images;

changing the rear camera view to a third position if the container is the first size and to a  
10 fourth position if the container is the second size.

17. A method for locating indicia on a truck, chassis, and container, comprising the steps of:  
presetting a camera to a first viewing position to learn more about the truck, chassis, or container;

analyzing the view from the camera in the first viewing position; and,

15 depending upon that view, changing the camera to another viewing position from which the camera can view the indicia.

18. A method for auto-locating the container and chassis code associated with a truck located in a gate lane at an intermodal terminal, comprising:

a) Detecting that a truck has entered the gate lane.

20 b) Detecting that said truck is stationary.

c) Determining the type of cargo that is associated with said truck.

d) Auto-positioning the rear camera to view the container code.

Auto-positioning the side camera to view the chassis code.

19. A system for determining a container code on a container and a chassis code on a  
25 chassis, the container and chassis being associated with a truck, comprising:

a first camera and software for the first camera for detecting when the truck has passed the first camera and the truck has stopped;

means for determining whether the container is present, and if so, whether it is a first size or a second size;

5 means for setting the first camera to preset position appropriate for viewing a first size container if the container is the first size, and for setting the first camera to a preset position appropriate for viewing a second size container if the container is the second size;

means for taking an image of the container with the camera;

means for passing the image to an OCR engine, which determines the container code.

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